Issue

In June 2011, EPA accompanied environmental activist Ms. Ruth Santiago, Esq., representatives of the environmental group ANDA (Association Nacional de Derecho Ambiental), and other concerned citizens on visits to eleven sites in Southern Puerto Rico where aggregate manufactured from ash generated by the AES Guayama coal-fired power plant had been placed on land, pursuant to a beneficial use determination issued by the Puerto Rico Environmental Quality Board. Ms. Santiago, et. al., maintain that such use is damaging to the environment and have requested intervention by EPA.

Current Status

In its June 2011 site visits, the Region observed the aggregate being used as fill material in great amounts over extensive unlined areas, some in proximity to rivers, streams, and wetlands. In several instances, disposal, rather than beneficial reuse, appeared to be occurring. We also met with the P.R. Department of Health to review their groundwater data, obtained from wells near the aggregate sites (no exceedences observed), spoke at length with EQB, who said they would provide us their aquifer ground water data, and will obtain and review similar data from the P.R. Aqueduct and Sewer Authority. Ex. 5 - Deliberative

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We are aware of numerous damage cases documented by EPA and others, including a 2003 RCRA 7002 Order and 2003 and 2004 CERCLA Orders for Pines, Indiana (requiring a remedial investigation/feasibility study, and placing numerous households on bottled water following the discovery of heavy metals contamination in drinking water wells from a nearby unlined coal ash landfill). Although no data documenting aquifer contamination in Puerto Rico has yet been obtained, the coal ash aggregate deposition we observed presents physical similarities to the disposal scenarios detailed in a 2007 EPA report on damage cases, the majority of which involved coal ash disposal in unlined surface impoundments and unlined landfills. Our investigation of this issue has also been requested by the coal combustion residuals rulemaking work group lead (Alex Livniat, PhD) in charge of damage case assessment for the Office of Resource Conservation and Recovery.

Interest from Elected Officials

None, although in 2007 AES agreed to pay a $6 million settlement on a lawsuit with the government of the Dominican Republic, which alleged that AES dumped 82,000 tons of coal ash from the AES Guayama facility along several beaches.

Background

In May 2010, EPA published a proposed rule to ensure the safe disposal and management of coal ash. Under the proposed rule, the Agency would leave in place the exemption for beneficial uses of coal ash, in which coal combustion residuals are recycled as components of products instead of being placed in impoundments or landfills EPA has yet to issue a final rule, and, until a decision is made, EPA's prior determination that coal ash is a solid waste remains in force. However, it is noted that no RCRA regulatory requirements for coal ash management currently exist, while states may, and have, made binding regulatory determinations on appropriate coal ash management practices. U.S. coal fired power plants generate over 135 million pounds of ash and other residues annually. Despite the presence of heavy metals, coal ash is used in a variety of applications. As of 2008, 44% of U.S. coal combustion residues were reused for road base, structural fill, snow and ice traction control, and in the production of cement and wallboard. It should be noted that, with the promulgation of EPA's Clean Air Interstate Rule, over half of U.S. coal fired power plants are projected to be equipped with upgraded air pollution control technology by 2020. The upgraded air pollution control technology will result in both a greater amount of ash for each unit of electricity produced, and an overall increase in the total content of hazardous pollutants in the ash.

In September 2010, the Region met with Mr. Carlos Gonzalez, the coal combustion product manager for AES Puerto Rico. He informed us that the Guayama coal-fired power plant mixes all of its bottom and fly ash with the spent limestone from its air pollution control equipment, to produce 4,000 tons/week of Agremax, an aggregate it ships off-site as a "product" in Puerto Rico (as well as to Alabama) for use in road bed construction, concrete manufacturing, and soil stabilization. In Puerto Rico, these uses are consistent with the existing beneficial use determinations made by the Puerto Rico Environmental Quality Board, which EPA confirmed have been, and remain, effective. Mr. Garcia informed us that no ash is or has been disposed at the Landfill, but noted that Agremax had been used several years ago at the Landfill for road bed construction. Additionally, 19,000 tons of Agremax had been recently used to construct a two foot protective cover over the geocomposite liner in a new landfill cell being constructed. Mr. Garcia confirmed that neither Agremax nor ash has been used for daily cover at the Landfill.

AES has nine other coal fired power plants in the Northern Hemisphere. Six plants landfill their ash, while three reuse ash and ash/limestone mixtures for landfill daily cover and road base (Hawaii), cement manufacturing (New York), and mine fill (Connecticut). The positive Puerto Rico Environmental Quality Board beneficial use determination is based on Agremax not failing the RCRA toxicity characteristic leaching procedure (TCLP) for heavy metals, as detailed in a 2007 study and report by the Puerto Rico legislature. The use of the RCRA toxicity characteristic leaching procedure (TCLP) to evaluate the potential for environmental release of heavy metals from coal combustion residues has been criticized by the EPA Science Advisory Board and the National Academy of Sciences. In response, EPA has developed new test methods for evaluating coal combustion residues for beneficial use applications, which are

currently undergoing validation. EPA has no plan to replace the regulatory uses of the TCLP with the new test methods. Rather, once validated, EPA intends the new test methods to be used where TCLP is not required or best suited, and where waste management or reuse conditions are known, in order to provide an estimate of contaminant release tailored to a particular environmental scenario or defined range of conditions.

Also in September 2010, the Region conducted two inspections of the Salinas Landfill to verify compliance with RCRA and the National Pollutant Discharge Elimination System (NPDES) Multi Sector General Permit (MSGP) for storm water discharges associated with industrial activities. The NPDES inspection confirmed that the facility has coverage under the MSGP, has developed the required Storm Water Pollution Prevention Plan, and that a leachate collection system at the Landfill was in place. No evidence of leachate releases or spill to the storm water collection system was observed. However, a storm water outfall was found to discharge through a pipeline into a ditch that eventually reaches the Jobos Bay, and no evidence of discharge monitoring, consistent with the terms of the NPDES permit, was found. An Administrative Compliance Order was issued in October 2010, requiring implementation of the MSGP, including best management practices for stormwater runoff control, and we will take any necessary further measures to bring the Landfill into compliance with the NPDES MSGP.

We subsequently spoke with Ms. Carmen González, of the Jobos Bay Estuarine Research Reserve, to determine the potential impacts, if any, the discharges from the Salinas Landfill may be having on the Reserve. Ms. González stated that the potential impacts are due to sediments being carried into the Reserve's waters by storm water run off from the Landfill, and that she would provide photographs to us that document the impacts. We are currently awaiting receipt of these photographs. We expect that these impacts will be minimized once the Landfill achieves compliance with its MSGP, under which the Landfill must monitor iron and total suspended solids on a quarterly basis and report its findings to EPA.

During the September 2010 RCRA inspection, it was discovered that some leachate breakout had occurred in a trench along the Landfill perimeter, and appeared to have been covered with soil. Mr. Miguel Garcia Campos, the environmental manager for Allied Waste Services, which owns the Landfill, subsequently provided documentation that the remaining leachate had been pumped and disposed. In addition, our review of analytical results of leachate and groundwater monitoring by the Landfill revealed that constituent levels are not inconsistent with what would be expected from a municipal solid waste landfill.

Lastly, we met with Ms. Santiago in December 2010, and she subsequently provided additional documentation with respect to the Salinas Municipal Solid Waste Landfill, comprising inspection reports by the Puerto Rico Solid Waste Management Authority and various documents developed by EPA and others relating to the Landfill, solid waste management in

Puerto Rico, and the potential beneficial uses of coal ash. We determined no further action was necessary based on the information provided at that time.